



TECHNICAL SERVICE BULLETIN

3.5L PowerBoost - Illuminated MIL With DTCs P0A1A And/Or P1A0E

21-2072

10 May 2021

Model:

Ford 2021 F-150

Issue: Some 2021 F-150 vehicles equipped with a 3.5L PowerBoost engine may exhibit an illuminated malfunction indicator lamp (MIL) and diagnostic trouble codes (DTCs) P0A1A and/or P1A0E stored in the secondary on board diagnostic control module C (SOBDMC), also referred to as the inverter system controller (ISC). These DTCs may be set due to an issue related to electric motor performance. To correct the condition, follow the Service Procedure steps to identify a concern with the hybrid drive unit.

Action: Follow the Service Procedure steps to correct the condition on vehicles that meet all of the following criteria:

- 2021 F-150
- 3.5L PowerBoost engine
- Illuminate MIL with DTCs P0A1A and/or P1A0E

NOTE: Part quantity refers to the number of that service part number required, which may be different than the number of individual pieces. Service part numbers contain 1 piece unless otherwise stated. "As Needed" indicates the part is required but the number may vary or is not a whole number; parts can be billed out as non-whole numbers, including less than 1. "If Needed" indicates the part is not mandatory.

Parts

Part Number		Description	Quantity
ML3Z-7P209-A	-	Hybrid Drive Unit	1
N800594-S100	Package Contains 4 Pieces, 4 Pieces Required for Rear Yoke, 4 Pieces Required If The Vehicle Has A 4 Bolt Transmission Yoke	Driveshaft Bolt	1 Or 2
W715579-S439	-	Center Bearing Support Bolt (2-Piece Driveshaft)	1
W520113-S440	Package Contains 4 Pieces, 4 Pieces Required	Stabilizer Bar Bracket Nuts	1
7L1Z-4B496-C	Package Contains 1 Piece, 2 Pieces Required	Front Driveshaft Flange Cup Bolts (4x4 Only)	2
W718926-S900	Package Contains 4 Pieces, 4 Pieces Required	Support Insulator Bolts (4x4 Only)	1
W500120-S439	Package Contains 4 Pieces, 4 Pieces Required	Support Insulator Bolts (4x2 Only)	1
W520114-S442	Package Contains 4 Pieces, 4 Pieces Required	Cross Member Nuts	1
W714418-S439	Package Contains 4 Pieces, 4 Pieces Required	Cross Member Bolts	1
W709771-S440	Package Contains 1 Piece, 2 Pieces Required	Transmission Mount Nuts	2
W520514-S440	Package Contains 1 Piece, 4 Pieces Required	Catalyst/Manifold Nut	4

ML3Z-5C226-A	Package Contains 1 Piece, 2 Pieces Required	Exhaust Gasket	2
ML3Z-6775-K	-	Heat Shield	1
W704980-S439	Package Contains 4 Pieces, 1 Piece Required	Shift Cable Bracket Bolt	1
W716375-S900	Package Contains 5 Pieces, 9 Pieces Required	Transfer Case Bolts (4x4 only)	2
VC-13-G	-	Motorcraft® Yellow Concentrated Antifreeze/Coolant (All Markets Except Canada)	As Needed
CVC-13-G	-	Motorcraft® Yellow Concentrated Antifreeze/Coolant (Canada Only)	As Needed
XT-12-QULV	-	Motorcraft® MERCON® ULV Automatic Transmission Fluid	As Needed
XL-5-A	-	Motorcraft® Multi-Purpose Grease Spray	As Needed
Parts To Inspect And Replace Only If Necessary			
ML3Z-7A191-A	-	Hybrid Drive Unit Gasket	If Needed
ML3Z-7869-C	-	Transmission Cooler (Only To Be Used If O-rings Are Not Available)	If Needed
ML3Z-3B478-B	-	Slip Yoke Boot Clamp (4x4 Only)	If Needed
ML3Z-4421-A	-	Front Driveshaft Boot	If Needed
L1MZ-7G084-A	-	Transmission fluid spray nozzle	If Needed
L1MZ-7A010-A	-	Plug	If Needed
W718758-S300	Package Contains 4 Pieces, Max 2 Pieces Necessary	Dowel	If Needed

Warranty Status: Eligible under provisions of New Vehicle Limited Warranty (NVLW)/Emissions Warranty/Service Part Warranty (SPW)/Special Service Part (SSP)/Extended Service Plan (ESP) coverage. Limits/policies/prior approvals are not altered by a TSB. NVLW/Emissions Warranty/SPW/SSP/ESP coverage limits are determined by the identified causal part and verified using the OASIS part coverage tool.

Labor Times

Description	Operation No.	Time
2021 F-150 4X2 3.5L PowerBoost: Retrieve DTCs, Test And Replace The Hybrid Drive Unit (Do Not Use With Any Other Labor Operations)	212072A	7.9 Hrs.
2021 F-150 4X4 3.5L PowerBoost: Retrieve DTCs, Test And Replace The Hybrid Drive Unit (Do Not Use With Any Other Labor Operations)	212072B	8.8 Hrs.

Repair/Claim Coding

Causal Part:	7P209
Condition Code:	42

Service Procedure

1. Road test the vehicle under load above 4000 revolutions per minute (RPM) while monitoring SOBDMC parameter identifications (PIDs) GTQ_CMD and GTQ_OUT.

2. Are the GTQ_CMD and GTQ_OUT readings separated by greater than 25 Nm (20 lb-ft)?

(1). Yes - replace the hybrid drive unit. Refer to the Workshop Manual (WSM), Section 303-01G.

NOTE: If a new hybrid drive unit was installed, the Transmission Identification (TRID) file must be updated with characterization data for the new hybrid drive unit. Locate the hybrid drive unit 2D barcode located near the input shaft. Scan the 2D barcode on the new hybrid drive unit using a QR or 2D barcode reader app. Record the last 7 digits of the barcode. This TRID information must be obtained before the transmission is installed back into the vehicle.

(2). No - this article does not apply. Refer to the WSM, Section 303-14G, for normal diagnostics.

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NOTE: The information in Technical Service Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers". Do not assume that a condition described affects your car or truck. Contact a Ford or Lincoln dealership to determine whether the Bulletin applies to your vehicle. Warranty Policy and Extended Service Plan documentation determine Warranty and/or Extended Service Plan coverage unless stated otherwise in the TSB article. The information in this Technical Service Bulletin (TSB) was current at the time of printing. Ford Motor Company reserves the right to supersede this information with updates. The most recent information is available through Ford Motor Company's on-line technical resources.